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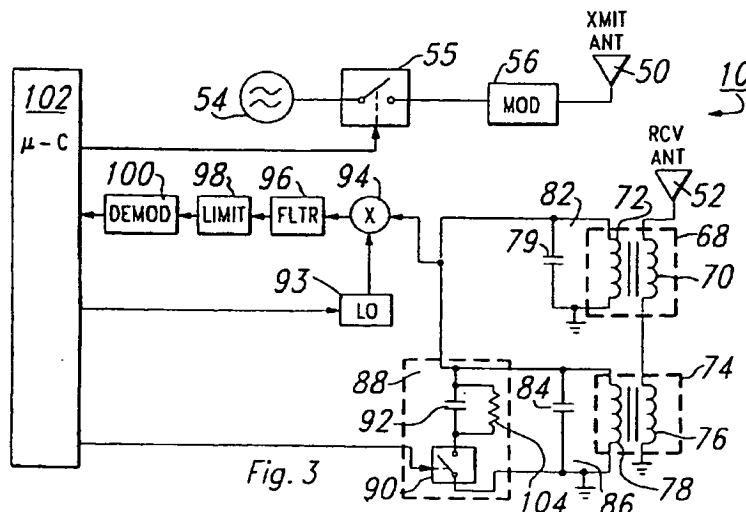
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(54) **Frequency diversity transponder arrangement**

(57) A method of communicating between a transponder and an interrogator. The interrogator (10) transmits a wireless RF interrogation which is received by the transponder (12). The transponder (12) then transmits a wireless RF response. The wireless RF response has a first channel response centered at frequency  $FDX1=RF+SC$ , a second channel response centered at frequency  $FDX2=RF-SC$ , and a third channel response centered at frequency  $FDX3=SC$ . The third channel response is a spurious signal resulting from using a non-linear element (32) as the transponder mod-

ulator (32,34). The interrogator (10) receives this wireless RF response. The response is received in the three channels with a first circuit (82) operable to receive said first channel response, a second circuit (86) is operable to receive said second channel response, and a third circuit (86,88) is operable to receive said third channel response. A controller (102) then selects the response from one of said first, second, or third circuits (82,86,88) for demodulating. A demodulator (100) may then demodulate one the selected channel responses. Other arrangements, systems, and methods are disclosed.



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# EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	US-A-4 725 841 (NYSEN PAUL A ET AL) 16 February 1988 * the whole document *	1,16,17	G01S13/75 G01S13/02
A	WO-A-82 01437 (DETERRENT TECH CORP) 29 April 1982 *abstract ; fig 1 *	1,16,17	
A	WO-A-87 03698 (STIFTELSEN INST MIKROVAGS) 18 June 1987 * the whole document *	1,16,17	
D,A	EP-A-0 301 127 (TEXAS INSTRUMENTS DEUTSCHLAND) 1 February 1989	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			G01S
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 8 May 1996	Examiner Deconinck, E
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